

REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated May 4, 2004. A Petition for Extension of Time (one month) and the fee therefor are enclosed.

Claims 12-17 have been allowed.

Claims 1-11 stand rejected on grounds of obviousness over Arai, et. al. (4,525,380), in view of JP11-135449. Reconsideration is requested in view of the amendments to the claims herein and the following remarks.

Rejected claims 1-11 address a specific problem and provide the solution therefor. The problem affects, in particular, so-called "bar" flash lamps that are utilized in thermal processing apparatuses that are deployed in integrated circuit manufacturing.

As described with reference to Figure 5, at page 8, lines 5-11 and page 12, lines 9-23, a unique drawback associated with this style of bar flash lamps is that their light output tends to deteriorate over time, at specific portions in the longitudinal direction of the elongate bar flash lamp. To solve that problem, the present invention monitors the light intensity at a plurality of locations of the bar flash lamps. The concept is to carefully regulate the light output to assure that the total quantity and distribution of the light output is carefully maintained. As described in the introductory pages of the instant specification, it is necessary to control the light output and therefore, indirectly, the heat output, to assure that one obtains the right profile of ion implantation into the semiconductor wafer. It is respectfully submitted that neither reference of record, nor even their combination, comes close to the disclosing the instant invention.

The primary Arai reference discloses an annealing process for a wafer using a bar flash lamp. However, as conceded in the Office Action, Arai is entirely silent about the technique of monitoring or measuring light output for detecting the same. In fact, the manner in which the bar flash tubes are arranged in Arai makes it very impractical to measure light output at different points along the lower stacked bars. (One would not wish to locate detectors in the path of the light toward the wafer 6.)

The Office Action has therefore turned to the secondary Japanese reference, which discloses that photodetectors PS1-PS4 are provided, such that each photodetector corresponds to

one of the lamps BL1-BL4, to individually detect the light output of each lamp. However, the lamps disclosed in this reference are spherical lamps, not bar lamps. Thus, there is not even a hint of a teaching in this reference of the idea of measuring light output over different portions of the same lamp.

Therefore, given the foregoing comments about the primary Arai reference and the further observation that the secondary reference discloses light output monitoring with respect to spherical lamps, there is no suggestion in the prior art that their teachings should be combined in the first place and, even if when they are, that the combined teachings discloses the concept of measuring light output emitted from a plurality of locations or portions of any given single bar lamp to detect the emission state at various points of the same lamp. The prior art does not ensure super accurate light output and heat generation for the highly sensitive integrated circuit fabrication of the present invention. Therefore, one of ordinary skill in the art would not have arrived at the present invention based on the prior art of record.

In view of the foregoing remarks, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 1, 2004:

Max Moskowitz

Name of applicant, assignee or
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Signature

September 1, 2004

Date of Signature

Respectfully submitted,

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